Appendix E: Tools for Natural Gas Portfolio Management

The following is a partial list of the portfolio management tools that can be used to manage risk in a volatile natural gas market. These tools can be used in lieu of spot market or monthly gas purchases.

1. *Fixed price physical contracts* provide a known quantity of natural gas at a fixed price for the duration of the contract. The fixed price contract makes budgeting much easier for the purchasing entity. Contract periods typically range from several months to a year: a mix of various duration contracts is desirable. Expenditures for fixed price contracts can exceed or beat the market indices, depending on market behavior, but on average will require a slight price premium to lock in the fixed price.
2. *Extendable fixed price physical contracts* offer a price discount relative to the standard fixed price contract described above, but give the natural gas producer or marketer the *option* to extend the contract for another term. Obviously if the market price goes down the natural gas producer/marketer will extend the contract and the consuming entity will end up paying a premium relative to the market index.
3. *Cap price physical contracts* allow the consuming entity to purchase natural gas at the market index price plus a premium. A cap price is set so the purchaser does not pay more than the cap (plus premium), no matter how high the market index price goes. The consuming entity saves when the index price (plus premium) is lower than the cap. This type of contract effectively limits the up side of exposure to the market, but allows the purchaser to obtain some of the benefits of the falling market prices.
4. *Swap contracts* fix natural gas prices for a purchaser at predetermined levels. Swap contracts involve at least two producer/marketers and a purchaser. The swap contract guarantees that the purchaser will only pay so much for the natural gas over a specified contract period. If the index price exceeds the swap price the producer or marketer pays the purchaser, but if the index price is lower than the swap price the purchaser pays the producer/marketer. Variations on the swap contract allow for fractional payments when the price exceeds or is below the swap price. No premium is required for the swap contract.
5. *Extendable swap contracts* are analogous to the extended physical contract in that it gives the producer or marketer the option to extend the swap contract at a predetermined lower swap price.
6. *Cap contracts* set an index cap price, and protect the purchaser from escalating prices, while giving the benefits of index price declines. The cap contract encompasses elements of the cap physical contract and swap contracts.
7. *Collar contracts* establish a collar zone where the purchaser pays the index price. Above the collar zone, the purchaser pays the producer/marketer, while below the collar zone the opposite holds true. Fractional payments when the price index exceeds or is below the collar zone may be designed into the contract. Essentially the purchaser is securing cap and floor prices, which, as with most of the above options, allows for certainty in budgeting.